

Data Manipulation

CPU Architecture
Philosophies

CPU Architecture Philosophies

Machine Instruction

- ✓ For Stored program, CPUs are designed to recognize the instructions encoded as bit patterns, Machine Language, Machine Instruction.

CPU Architecture Philosophies

Basic Machine Instructions

- ✓ Machine Instructions are quite short, once basic level is met, adding more instructions is not adding anything in machine's capability, its just making it more convenient.

CPU Architecture Philosophies

RISC

- ✓ Reduced Instruction Set Computer.
- ✓ Should execute minimal set of instructions.
- ✓ Machine is efficient, fast and less expensive.

CPU Architecture Philosophies

CISC

- ✓ Complex Instruction set Computer
- ✓ Others argue CPU should be able to execute large complex instructions even redundant .
- ✓ The more complex CPU can cope with the ever increasing complexities.

CPU Architecture Philosophies

CISC Vs RISC

- ✓ In 1900 and even in millennium, both architectures were competing to take place in desktop computers
- ✓ Intel Processors developed for PC are CISC,
- ✓ Power PC by Apple, IBM, and Motorola are RISC.

CPU Architecture Philosophies

CISC viability

- ✓ The cost to build CISC reduced and intel processors are being used virtually in PCs, laptops, even Apple is using intel at backend.

CPU Architecture Philosophies

RISC utilization

- ✓ Company Advanced Risk Machines (ARM) utilized RISC for low power consumption in game controllers, digital TVs, navigation systems, smartphones

Summary

CPU Architecture Philosophies

- ✓ CISC
- ✓ RISC
- ✓ Their realization